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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

VOL. VII SEPTEMBER, 1935 No. 3

Oxalis sepalosa from Peru

(See Harry Johnson's Article, Page 43)

CACTUS AND SUCCULENT JOURNAL

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VOL. VII SEPTEMBER, 1935 No. 3

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Introduction to Notes on Echeveria

On several previous occasions we have mentioned the forthcoming appearance of a monograph on the genus Echeveria, the work of our friend and associate-editor, Mr. Eric Walther. His desire to be accurate and thorough, as well as our present inability to finance the publication adequately, prevents us from making any definite promise as to date of appearance, but we consider ourselves fortunate in being able to publish the following preliminary notes.

The exigencies of scientific procedure make advisable the early publication of several new species, new varieties and new combinations, thus affording us a foretaste of the complete work.

Chaos and confusion aptly describe the state of the nomenclature of our private collections; and the difficulty of correctly determining species from the inadequate and often uncertain descriptions now available makes Mr. Walther's undertaking a most opportune piece of research. To have these puzzling plants unscrambled and properly christened is almost beyond the dreams of Echeveriophiles. If we await its publication with unscientific impatience its long suffered need may be our apology.

We hope that the response of our readers will be such as to encourage Mr. Walther to carry on his studies to an early conclusion; and also induce some publisher to bring out the contemplated Echeveria-monograph in a form worthy of the subject and in keeping with the painstaking manner in which the author has done his share of the work.

—Editor.

The illustrations have been grouped for this issue of the Journal in order to show as many as possible. The monograph would contain full page illustrations made from the hundreds of clear photographs taken by Mr. Walther.

Echeveria lozani

Notes on the Genus Echeveria

By ERIC WALTHER

(All photos by author)

I. SOME NEW SECTIONS, SERIES, SPECIES, VARIETIES AND COMBINATIONS

As A RESULT of continued study in the field, various herbaria and of cultivated plants, a considerable amount of new and interesting information has been accumulated by the writer. While these studies are as yet far from completed, a few of our discoveries and observations may be placed on record here, for the benefit of others interested in this group of plants.

Two of the new species published herewith are credited to the late Dr. J. N. Rose, the specimens designated as types being part of his collection at the U. S. National Herbarium. Thanks are due Dr. W. R. Maxon, Associate Curator, for permission to make use of this material. However, the present writer accepts full responsibility for the Latin diagnoses, etc.

For kindly reading proof of our Latin, thanks are also due Dr. W. A. Setchell of the University of California.

ECHEVERIA DC. Section **Bracteolata** EW. new section

Inflorescence equilateral; pedicels bracteolate; upper ones usually single-flowered; corolla mostly sharply pentagonal; nectaries commonly large, truncate-thickened, fitting into pronounced cavity at base of petals.

Series **Mucronatae** EW. new series

Roots tuberous-fusiform; plants stemless, glabrous; inflorescence subspicate, at least with the upper flowers sessile.

Type species: *Echeveria mucronata* Schlechtendal

1. Echeveria crassicaulis EW. new species.

Acaulescens, radicibus fusiformibus, foliis subhomboideis-orbiculatis usque ad oblongis, mucronatis, viridibus, 5 - 7 cm. longis; scapus pseudoterminalis, 40 - 80 cm. altus, pedunculis crassissimis, erectis; bracteae inferiores breves, latae, obovatae, 35 mm. longae; spica equilateralis; flores 10 - 30, sessiles; bracteae sub flores quam corollam paulo breviores; pedicella brevissima, crassa, bracteolata; sepala 5, subequalia, acuta; corolla ad 14 mm. longa, colore rubro-flavoque.

Stem short, subterranean; roots fusiform-thickened; leaves rosulate, deep green, oblong, oblanceolate-rhomboid to orbicular, apex rounded and mucronate, 5 to 8 cm. long, 20 to 35 mm. broad; inflorescence apparently pseudoterminal, equilaterally-spicate, to 60 cm. tall; peduncle stout, to 15 mm. thick; lower bracts numerous, obovate-cuneate, 25 to 40 mm. long; flowers to 30 or more, closely subtended by upper bracts which are only slightly shorter than corolla, the latter red and yellow, to 15 mm. long, 10 mm. in diameter at base, 6 mm. at mouth; sepals somewhat unequal, more or less spreading at anthesis, longest to 10 mm. long; corolla-segments thick, broad, at their mucronate tips only slightly outcurved.

Type specimen: Calif. Academy of Sciences No. 223898 (E. Walther 1934/37).

Type locality: Cima, Federal District, near border of Morelos, along road to Cuernavaca, Mexico, at elevation app. 9 to 10,000 ft., on pine-covered lava flows.

Material seen: Living plants collected by the writer; Pringle 96/6490 (UC, US, GH, MGB, FM, PA, MC); Pringle 03/11814 (US, GH); Rose & Painter 03/7175 (US); all from Cima, Serrania de Ajusco.

Remarks: While dried material of this has long been confused with *E. mucronata*, the new species may readily be distinguished from Schlechtendal's species by its relatively shorter and broader bracts, the longer sepals; and shorter corrolla with thicker segments nearly erect at tips. Even closer is the resemblance to *E. pinetorum* Rose, from Chiapas, but that species is much smaller in all its parts. The name refers to the exceptionally stout peduncle.

2. Echeveria longipes EW. new species.

Acaulescens, radicibus fusiformibus, foliis basalibus lienari-oblongis, 8 - 10 cm. longis, 15 mm. latis, acutissimis; scapus lateralis, ad 35 cm. altus, ramis elongatis, infimis usque ad 16 mm. longis, valde ascendentibus, 1 - 2-floris; 3-bracteolatis; bracteae inferiores oblongae, 3 - 4 cm. longae, cuspidatae; sepala 9 mm. longa, ascendentia; corolla brevis, 14 mm. longa, et 9 mm. diametro basali, colore pallidocarnea, apicibus flava.

Stem short, subterranean; roots fusiform; leaves rosulate, linear-oblong, sharply acute, 8 to 10 cm. long, 15 mm. broad, light elm-green, slightly glaucous; inflorescence racemose-paniculate to subspicate above, to 35 cm. tall; peduncle 5 to 6 mm. thick; lower bracts elliptic-oblong, 3 to 4 cm. long, cuspidate; most branches single flowered except one or two near center of panicle, but even the single flowered ones to 16 mm. long, strongly ascending, 3-bracteolate; sepals strongly ascending, subequal, to 9 mm. long, asphodel-green, acute; corolla short, 14 mm. long, 8 to 9 mm. broad at base, 4 mm. at mouth, color light congo-pink at base, flesh-ocher above, tips and inside of segments empire-yellow; styles slender, apple-green; nectaries pale, 1¼ mm. wide.

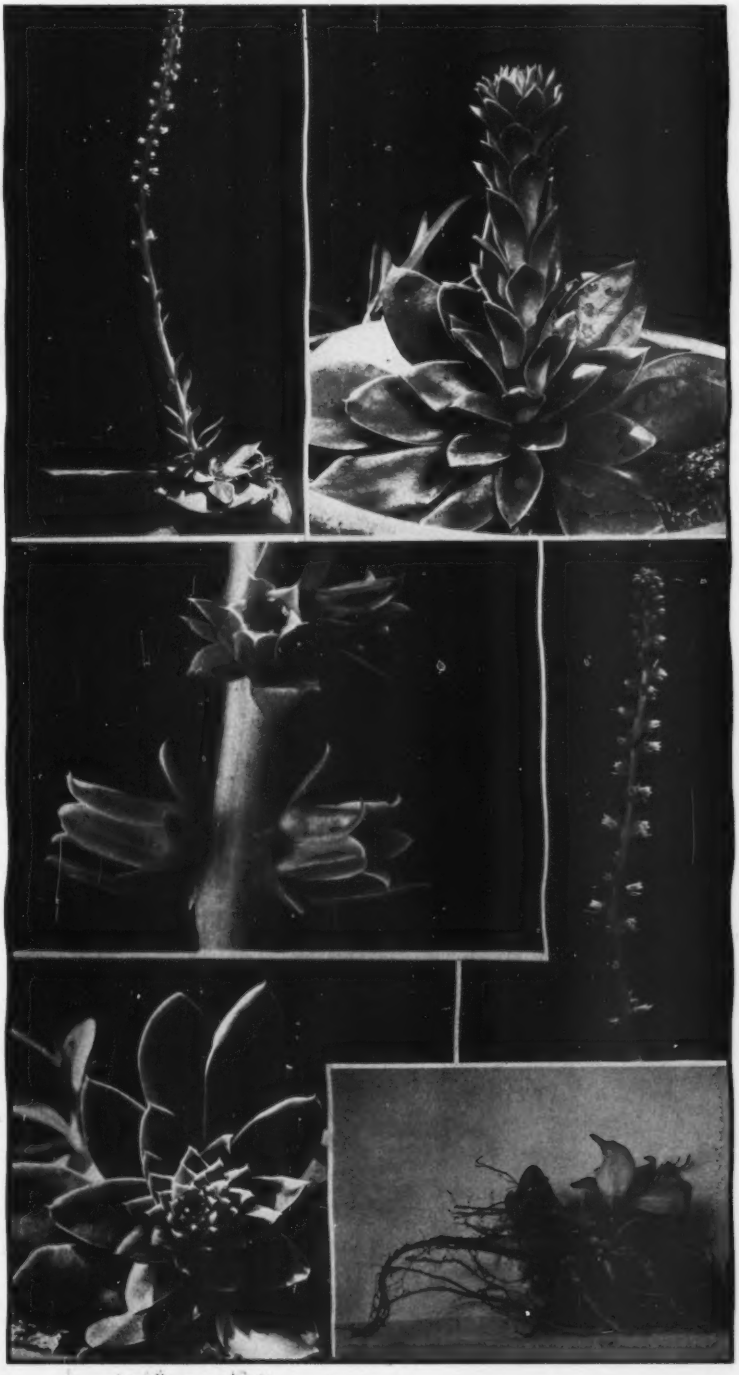
Type specimen: Calif. Academy of Sciences No. 223897 (E. Walther 34/38).

Locality: Puente Grande, at Huehuetoca, Hidalgo, Mexico; on riverbanks.

Remarks: Related to *E. paniculata* A. Gray and *E. mucronata* Schlecht.; this new species differs from the former in the mostly solitary flowers with relatively broader, more reddish corolla and the narrower, straight leaves. *E. mucronata* differs in its strictly sessile flowers and narrower corolla. The name refers to the long footstalks of the flowers.

3. Echeveria paniculata A. Gray, Plantae Wrightianae, *1*:76. 1850.

Cotyledon grayi Baker, Saund. Ref. Bot., *1*:33. 1869.
Echeveria grayi Ed. Morren, La Belge Hort., *24*:161. 1874.
Echeveria schaffneri Rose (*not* Watson), North Am. Flora, *22*:1:18. 1905.
Echeveria maculata Rose, l.c., page 18. 1905.



LEFT: *Echeveria crassicaulis* EW. spec. nov., flowering plant, app. x0.1.

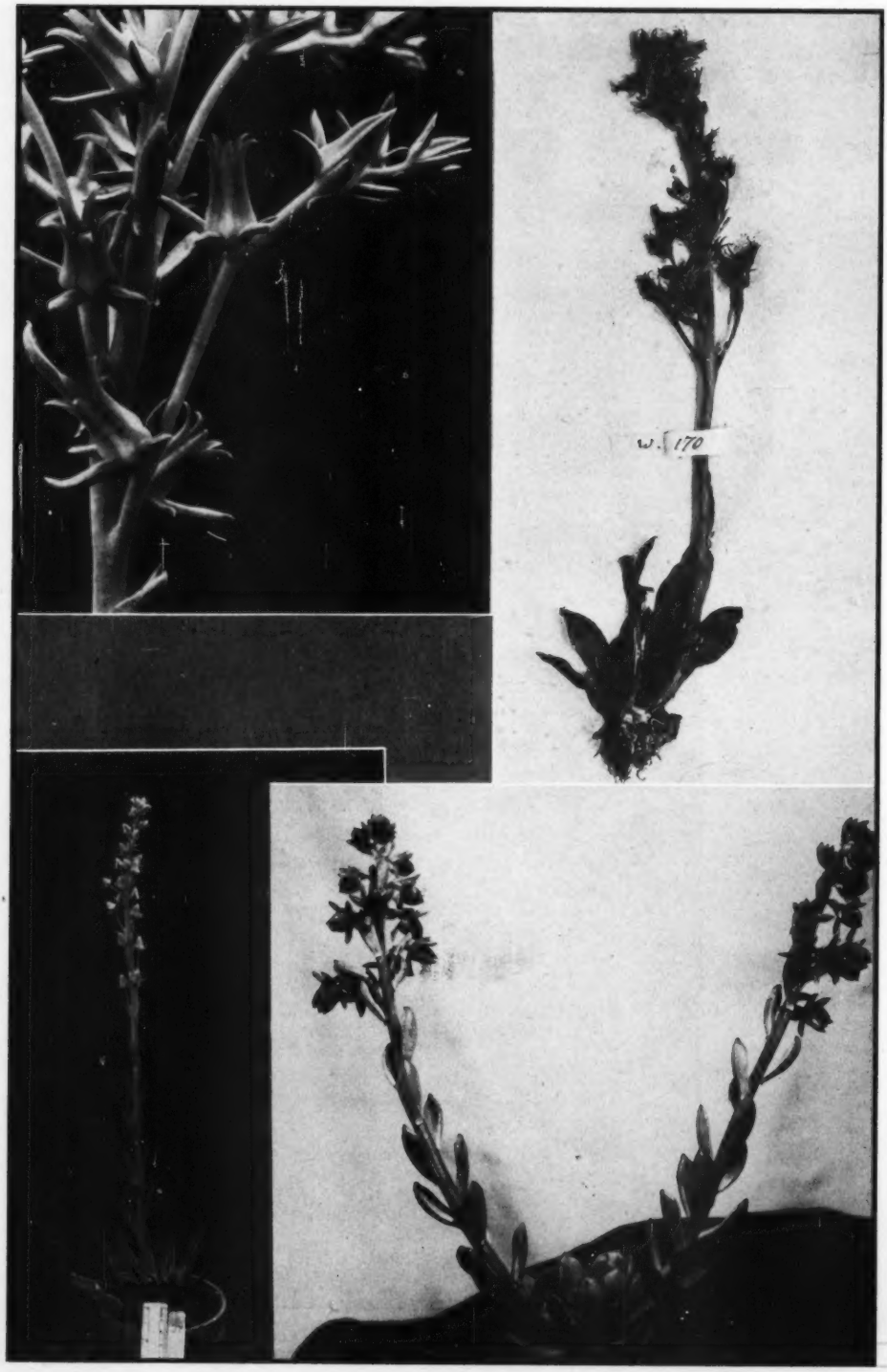
RIGHT: *E. crassicaulis* EW. sp. nov., inflorescence ¼ grown, app. x0.2.

LEFT: *E. crassicaulis* EW. sp. nov., four flowers, app. x1.2.

RIGHT: *E. crassicaulis* EW., flowerspike, app. x0.2.

LEFT: *E. crassicaulis* EW., first sign of developing flowerstem, app. x0.6.

RIGHT: *E. crassicaulis* EW., root-system of freshly collected plant, app. x0.35.


W. 170

Remarks: Of these synonyms, the first two are accounted for by the existence of a previously named South African species of *Cotyledon*. Dr. Rose's description of *Echeveria schaffneri* clearly applies to *E. paniculata* rather than to Watson's plant, which last has a bifid inflorescence with secund branches and bractless pedicels. Rose's *E. maculata* is supposed to differ mainly (and solely?) in having leaves spotted or mottled, a feature we have found to occur in several species, allied or otherwise, as a consequence of insect infestation, by thrips, aphids, etc.

The plant, long cultivated in California under the name *Echeveria maculata*, has finally flowered at the Botanical Gardens of the University of California and turns out to be *Sinocrassula densirosulata* (Praeger) Berger, of a genus closely related to *Sedum*, but with only 5 stamens.

Series **Australes** EW. new series

Stem evident, branching; leaves small, glabrous; inflorescence equilateral, with elongated, bracteolate, 1 to 3 flowered pedicels.

Type species: *Echeveria bicolor* (HBK.) EW. new combination

4. Echeveria bicolor (HBK.) EW., new combination.

Sedum bicolor Humboldt, Bonpland & Kunth, Nov. Gen. & Spec. Plant, 45. 1823.
Echeveria bracteolata Link, Klotzsch & Otto, Icon. Plant. Rar., *1*:2:68. 1841.
Cotyledon subspicata Baker, Saund. Ref. Bot., *1*:30. 1869.
Echeveria venezuelensis Rose, Gentes Herbarum, *2*:4. 1930.

Remarks: Through the kindness of Dr. Guillaumin of the Jardin des Plantes, Paris, we have obtained a photograph of Humboldt's type, which clearly belongs into *Echeveria*, as already suggested by DeCandolle. All subsequent collections from Caracas seem to be the same species; and *E. subspicata* from Columbia seems to differ very little.

4a. Echeveria bicolor var. **subspicata** (Baker) EW., new combination.

Remarks: See remarks under preceeding item. In as much as examination of dried specimens alone can be relied upon, our treatment is borne out by a survey of all Colombian material seen.

5. Echeveria rosea Lindley, Botanical Register, 1842, No. 22.

Courantia echeverioides Lemaire, Jard. Fleur., *1*:92. 1851.
Cotyledon roseata Baker, Saund. Ref. Bot., *1*:55. 1869.
Courantia rosea Rose, Bull. New York Bot. Gard., *3*:11. 1903.
Courantia rosea Rose, North Am. Flora, *22*:1:33. 1905.
Echeveria pittieri Rose, Cont. U. S. Nat. Herb., *13*:9:296. 1911.
Echeveria (Sect. Courantia) Berger, Pflanzenfam. Ed., *2*:18a:481. 1930.

Remarks: The confused synonymy of this plant arises largely from Lemaire's attempt to found a new genus on characters either abnormal or misinterpreted. Examination of both living and numerous dried specimens shows no such staminal tube as Lemaire visioned.

True, the filaments of the episepalous stamens are attached to the corolla somewhat higher-up than in other species of *Echeveria*, but no grounds exist for creation of a distinct genus. Dr. Rose's type of *E. pittieri* seems missing, but material from the type-locality, with Pittier's identical collection-number, was indistinguishable from *E. rosea* Lindley.

PAGE 38, TOP LEFT: *Echeveria paniculata* A. Gray, portion of panicle, plant from El Salto, Hidalgo. app. x0.9.

TOP RIGHT: *Echeveria paniculata* A. Gray, photo of type, collected by Dr. Wislizenus at Cosiquiriachi, Chihuahua; courtesy Dr. Robinson, Gray Herbarium, Cambridge, Mass. app. x0.4.

BOTTOM LEFT: *Echeveria longipes* EW., sp. nov. (Type) app. x0.25.

BOTTOM RIGHT: *Echeveria gracilis* Rose, plant in collection of V. Reiter, Jr. app. x0.5.

6. Echeveria gracilis Rose, new species.

Caules breves; foliis crassis, subrosulatis, obovato-cuneatis, 25 - 30 mm. longis, 12 mm. latis, viridibus, rubro-mucronatis; racemae equilaterales vel pseudosecundae, usque ad 20 cm. altae; bracteae plures, foliis similes, minores; pedicella 10 - 15 mm. longa, bracteolata; sepala patentissima, 8 - 10 mm. longa; corolla aurantiaca, pentagona, 8 - 9 mm. longa, 6 mm. crassa, segmentis erectis.

Stem evident, if short, often decumbent from base; leaves subrosulate to scattered, thick, 3 cm. long or less, 12 mm. broad, 5 mm. thick, obovate-oblong, mucronate, flat above, rounded beneath, color courge-green, the mucro nopal-red; inflorescences several, equilateral or subsecund from one-sided lighting, racemose to subpaniculate, to 20 cm. tall; bracts many, leaflike, ascending, to 20 mm. long; pedicels 10 to 15 mm. long the lowermost often 2-flowered, all bracteolate; sepals widely spreading, subequal, to 10 mm. long; corolla bright scarlet, sharply pentagonal, 9 mm. long, 6 mm. in diameter at base, 4 to 5 mm. at mouth; segments thick, erect, deeply hollowed within, apiculate at apex; carpels short; styles short, dark maroon at tips; nectaries maize-yellow, truncate, reniform.

Type specimen: U. S. National Herbarium No. 1319967 (C. A. Purpus 09/24).

Type locality: Type specimen from rocky slopes in high Sierra at 8 to 9,000 ft. near Coreatlan, Puebla, Mexico. Here belongs also C. H. Thompson 11/134 (US, MBG), from vicinity of Tehuacan.

Remarks: Even if this was recognized as a true species, from study of living plants in our local collections, before we ever saw Dr. Rose's material and notes, we see no reason for abandoning his manuscript name.

Allied species with more than a single flower on each lower pedicel or branch are *E. maxonii* Rose and *E. australis* Rose. Of these, the former has a much longer stem, larger leaves neither gray nor glaucous, inflorescence to 60 cm. tall, with slender pedicels, sepals 5 mm. long or less and thinnish petals; while *E. australis* is much taller, the leaves are 3 to 7 cm. long, distinctly glaucous, inflorescence to 30 cm. tall or more, with most pedicels 2-flowered, flowers crowded, sepals strongly ascending, to 12 mm. long, with the corolla still longer.

Locally, the name *E. guatemalensis* has been misapplied to this, but Dr. Rose's species of that name has much thinner, more scattered leaves, shorter pedicels and is not grown here as far as we know.

Series **Racemosae** EW., new series.

Stem none, or short and only rarely branched; leaves densely rosulate, small or medium-sized; inflorescence equilaterally racemose, its pedicels mostly single-flowered, elongated and bracteolate; corolla often narrow, to 15 mm. long; sepals reflexed, spreading or ascending.

Type species: *Echeveria racemosa* Schlecht.

7. Echeveria chilonense (O. Kuntze) EW., new combination.

Sedum chilonense O. Kuntze, Rev. Gen. Plant., 3:83. 1893.
Echeveria whitei Rose, Addisonia, *10*:47:344. 1925.

Remarks: Thanks are due the late Dr. Britton for loaning us what must be considered Kuntze's type, purchased for the Britton Herbarium by Mr. A. Carnegie. The material in question undoubtedly belongs into *Echeveria,* and even if the original description calls for "yellow" flowers and a "cymose" inflorescence, these slight discrepancies need not be taken too seriously. In at least some of our material, cultivated under the pseudonym *E. whitei,* the inflorescence is somewhat paniculate below and could readily be called cymose.

(*To Be Continued*)

"CALIFORNIA CACTUS"

100 pages and 85 illustrations, 1 in color, of the cactus native to California. 2 new species described. An attractive book reasonably priced at $1.50. Send check or money order to author, E. M. Baxter, Bellflower, California, or to Abbey San Encino Press, 6162 No. Figueroa St., Los Angeles. Immediate delivery.

The following 8 pages are the ninth installment of Britton and Rose THE CACTACEAE Vol. II.

NOTES FROM DR. W. E. LOWRY

In response to an editorial note in the August issue of the Cactus and Succulent Journal asking for comments on the illustrations of cacti in that issue I beg to submit the following:

The illustration of an Echinocereus from the McCabe Gardens under the name of *Echinocereus merkeri* does not correspond with the description of that species as published in THE CACTACEAE nor with the plant as I know it in nature. *E. merkeri* is a cespitose plant with very thick stubby joints, from 4 to 6 inches in diameter, relatively few spines, distant areoles and a purple flower with no sign of a tube. It grows in close proximity to *E. conglomeratus* and *E. sarissaphorus*, but under entirely different immediate conditions, *E. merkeri* being confined to the dense underbrush of the cañons while the *E. conglomeratus* and *sarissaphorus* are found on the foothills and adjacent plains with little or no shade. Flowers of all three are almost identical in size, shape and color. Plants in my garden do not grow as large and have less spine development than those in natural conditions. I have in the garden plants of the species illustrated or very close thereto, but am unable to be positive as to the correct name. If not *Echinocereus salm-dyckianus* it is a very near relative of that species. The long tubed scarlet flower, very rotate when fully opened and remaining open for several days, is quite distinct from most flowers of this genus.

The illustration of *Thelocactus conothele* from the Tobusch collection is in my opinion a long spined specimen of *Thelocactus saussieri*, a species in which there is often great variation in the length of spines (from ½ to 2½ inches). The flower confirms this opinion. *T. conothele* is one of the many various forms or subdivisions of *T. bicolor* and the flower is identical with the flower of that species, but somewhat larger.

The view of *Echinocactus pilosus* (*Ferocactus stainesii*) from Mrs. Luz V. de Moeller of San Pedro de Colonias, Coahuila, Mexico, brings up the question as to the correct name of this species. Britton and Rose in Vol. III of THE CACTACEAE describe two species of this relationship, the first of which they admittedly had no acquaintance (*F. stainesii*), but the second (*F. pringlei*) was better known to them. During over half a century of intimate acquaintance with this part of Mexico I have never found but one species of this relationship nor have I ever heard from any of the commercial collectors of Mexico of the existence of a second species. Whether *F. stainesii* or *F. pringlei* be the correct name is a matter for discussion, but there is no reason for burdening the species with two names when two different species do not exist. This is the only truly large Ferocactus of northern Mexico as *F. longihamatus* and *F. rafaelensis* never approach the great size of *F. pringlei* and until it overlaps *F. melocactiformis* well down in San Luis Potosi it is without a rival. Galeottis old name, *pilosus*, is most appropriate as the white bristles in marked contrast to the brilliant red spines make the name *pilosus* (hairy) a most fitting one. In nature, this species is much less variable than most cacti, but in cultivation there is some alteration of the length and color of the spines. It is highly probable that *F. stainesii* was described from one of these garden specimens. Britton and Rose are in error in their statement that the fruit dehisces through a basal pore. The yellow slightly scaled fruit is of a peculiarly pleasant acid flavor, called "limon" or lemon by the natives and is in considerable demand as a substitute for that fruit. When allowed to remain on the plant, the fruit dries and remains until the following year unless pushed off by new growth or eaten by birds or insects. Clusters of this plant frequently attain a weight of several tons with several of the larger stems reaching a height of twelve to fifteen feet.

Laredo, Texas.

SECRETARY'S COLUMN

"Cactus Day at the Fair" brought out a large representative gathering to see the start of the cactus garden at Balboa Park, San Diego, the home of the Pacific International Exposition. Already the space allotted for the garden, which is to be a permanent addition to the landscaped beauty of the park, is beginning to show the promise of becoming one of the botanical high lights. With the additions of specimens to those already in place and the growth of a few years, the garden will unquestionably be the finest planting of cacti in San Diego County. Everywhere the expert guidance of Miss Kate O. Sessions was in evidence. Miss Sessions, one of the *Society's* vice-presidents, who conceived the project, was on hand to explain her plan and to receive the sincere congratulations of her host of friends. The JOURNAL will cooperate with this valued project as soon as final plans are made at the termination of the Exposition.

The garden, located to the west of the Educational Building, overlooks the heavily wooded canyon and the ocean. Raised beds have been designed, interlaced with numerous paths about the hillside; the whole is suggestive of the desert with the top coat of decomposed granite and neutral brown rocks.

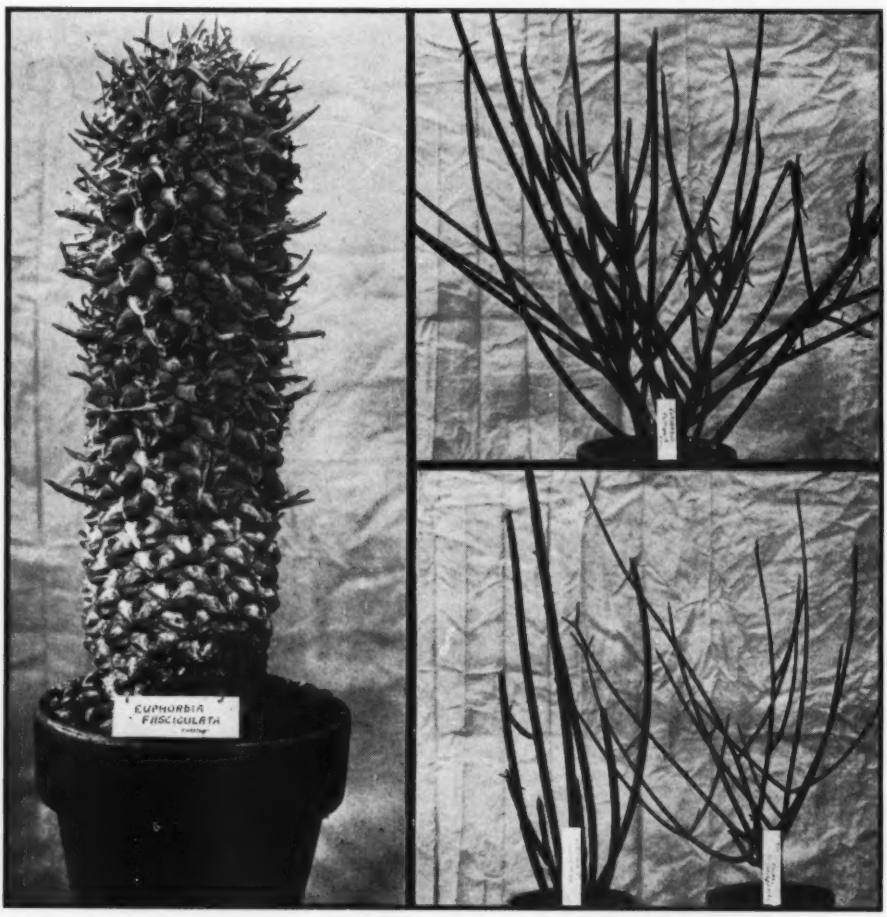
Two of the most interesting and spectacular exhibits at the present time are the beds of Arizona and Oklahoma cacti and desert plants and the bed donated by the Desert Nursery of Palm Springs, California. The former, the gift of The Cactus and Succulent Society of Oklahoma, and the Border Cactus Nursery of Nogales, Arizona, displayed a large variety of specimen desert cacti and agaves arranged under the direction of the University of Arizona, Tucson, Arizona, and sponsored by the Federated Garden Clubs of Arizona. Two monstrous branched Carnegiea giganteas feature the Desert Nursery Exhibit; both obligingly flowered profusely for the edification of the pilgrims.

From tiny flowering neomammillarias to huge cerei, weighing tons, the garden is one to charm and captivate. We predict that it will become a Mecca for cactus lovers in the years to come.

Among those who so generously contributed to the garden are: Huntington Botanic Gardens, San Marino, California; The Torrey Pines Experimental Station of the U. S. Dept. of Agriculture; Phoenix Cactus Club; Rio Grande Valley Cactus Garden, Texas; William Decker; Kate Walker; McCabe Gardens; Carl Seelbach with a group of cerei; and Carl Brassfield's entire display of opuntias, which won the educational prize at the 1935 show, have been placed in one of the beds.

Howard Gates' display of specimen Mexican plants was in fine contrast to the well arranged planting of succulents by Soledad Gardens. Mrs. Neff Bakkers brought an interesting group of plants to show on "Cactus Day" and her booth served as headquarters for all cactus fans at the Exposition. Wilshire Rock Craft Gardens showed an Epiphyllum planting by R. F. Kado.

CLARENCE L. CLUM.



Euphorbias Grown in Australia

From HERBERT J. SOLOMON

LEFT: *Euphorbia fasciculata* Thumb is one of the slowest growing species of the entire Euphorbiae. Member Solomon has estimated the age of this plant shown as 80 years. We believe this is somewhat exaggerated, having raised the species from seed we are inclined to think that 30 to 40 years would be the approximate age of this specimen. *E. fasciculata* is an unbranched columnar, spiney Euphorbia that attains a height of from 1 to 1½ feet, with a diameter of 2 to 3 in. The spines, which are modified peduncles, are set at the apex of each tubercle, they are stout and very rigid and woody, but unlike most Euphorbias of this type, the spines are never treacherously sharp, the point being more or less blunt most of the time. Thunberg, in describing the plant, mistook these stout spines for branches for he refers to the plant as being unarmed, later N. E. Brown corrected this mistake in the FLORA CAPENSIS Vol. V, Sec. 11, p. 339. A very peculiar characteristic of this species not found in others, is that the leaves are produced on the peduncles, these are very small and can be seen only by close observation. They are soon deciduous and leave no visible scar. The plant is native to the Karroo desert of South Africa and is considered one of the prize possessions of any collection.

UPPER RIGHT: We know very little about *Euphorbia fumalis*. We have imported plants under this name, but the importation proved to be *E. manuritanica*. If there is a difference in these two species we have never been able to find it and we are inclined to believe that *E. fumalis* is a synonym of *E. mauritanica*. Anyone in a position to furnish us with a better photograph and further information will be extending a favor that will be appreciated.

LOWER RIGHT: On the right is a rooted branch of *Euphorbia mauritanica*—the one Euphorbia that does better in Southern California than in its native habitat. It remains green and fresh throughout the entire dry season without irrigation and for this reason experiments are now under way to determine the plants adaptability for us in fire breaks and soil erosion in the hills of the southern part of the state. *E. mauritanica* has three synonyms that we know of —the wide range and the different environments are perhaps responsible for this. Dr. E. Meyer described and named two of them from what Dr. Brown later found to be polymorphic specimens from this species, these were *E. hydnorae* and *E. melanosticta*. Also Boiss gives us a *E. phymatocl'da* that is today treated as a synonym. The United States government Department of Agriculture has made extensive plantings and unsatisfactory experiments in San Diego County, California, in an effort to develop a source of rubber. It is said that the species has furnished ancient fishermen with a means of catching fish for untold centuries and in some countries is still used for that purpose. On the left is shown a rooted cutting of *E. dregiana* E. Mey. which very much resembles a *pedilanthus* in appearance, but is not a member of that group. This species forms a compact bush three to six feet high and the same in diameter. It is very much branched with all ramificating from the main stem which is from 2 to 3 inches in diameter. Being leafless, a large specimen plant has the appearance of a clump of reeds. *E. dregiana* has a fairly wide range of distribution in South Africa where the natives use it as a source of a poor grade of rubber which has no commercial value. Plants of this species are being introduced this year into the United States for the first time.

G. A. FRICK.

Small private collection of cacti for sale. Small electric green house. Reasonably priced. H. WESTON, 7112 N. Figueroa St., Los Angeles, Calif.

Large specimen *Pachycereus marginatus* for sale; 5 branches—7 ft., 6 ft., 5 ft., 1 ft., 1 ft., please make offer to Cactus Journal, 6162 N. Figueroa St., Los Angeles, Calif.

A SUCCULENT OXALIS

(See photo page 33)

I have just received from Mr. Curt Backeberg notes on a new succulent plant from Peru, secured on his last trip. This appears to be an extremely interesting little plant, very slow in growth, looking somewhat like a small tree and flowering all summer long. The blossoms, as may be seen in the photograph, are of good size and are bright yellow in color. It seems to adapt itself well to cultivation, growing in either moist or dry locations. It should appeal to all lovers of succulents as it is one of the few plants belonging to this interesting family that are of succulent habit.

The genus *Oxalis* belongs to a family of plants called OXALIDACEAE which is closely related to the geraniums. There are about 400 species of them found in South Africa and the warmer parts of the Americas. The leaves of the whole group are clover-like and "sleep" at night. The flowers generally close at night and often in cloudy weather, and are quite interesting botanically for they are trimorphic. That is to say they have flowers of three types with long, short and medium styles. This grouping of the styles is found similarly in some of the Primulas. Charles Darwin claims this to be a provision against self-fertilization. Botanically, the group may be divided up roughly into those plants which produce neither tubers or bulbs and are leafy stemmed and those producing bulbs.

The new species apparently is closely related to *O. ortgiesii* Regel., a species found in Peru. It belongs to the leafy stemmed group. Recently I received notes on a species in South Africa that is aquatic but have not yet been successful in importing it. While such a wide diversity of ecological characters is not common, still several groups of plants have members that are aquatic while other members are found in dry regions.

Mr. Backeberg expects to import some of these plants from Peru on his trip this fall.

HARRY JOHNSON.

NOTICE TO COMMERCIAL MEN

Why, oh why, do *most* of the commercial growers follow the line of least resistance when shipping plants? In many instances we receive plants where the shipper drops a handful or more of excelsior in the bottom of a box, then the plants, then more excelsior. It would take just a few moments more for the man who packs the plants to put in the excelsior, then a few old newspapers or bagging, then the plant, and repeat the same procedure on top of the plant. The writer has spent four (4) hours in cleaning one plant of excelsior. And this has happened on many occasions.

A. BUYER.

An Interesting Hybrid

By Dr. A. D. Houghton

Specialists in hybridization and the science of genetics, as well as collectors of cacti and succulents, are much impressed by the hybrid figured in this illustration. Prof. Ernest Babcock, one of the greatest authorities in the world, remarked that it was the best example of intermediacy that he had ever seen.

The male, or pollen plant, is *Bryophyllum tubiflorum;* the female plant being *B. daigremontanum*. The male plant has a tubular leaf (see Vol. V, p. 563 Amer. Cact. Jour.) which is sessile, that is, it has no petiole and the adventitious buds are born almost entirely at the apex of the leaf. The tubular leaf is of a light green color, irregular and densely spotted with blotches of olive green.

The female, or seed bearing parent, (*B. daigremontanum*) has a definite petiole to its leaf, one fourth as long as the blade; the blade being approximately 5 in. long and as much as 3 in. towards its base. The adventitious buds appear at every crenation around the margin of the blade. The upper surface of the leaf and the entire petiole are of an apple green color and bear no such markings as in *B. tubiflorum* while the under surface of the leaf in *B. daigremontanum* has a few scatered splotches of darker green towards the margins.

The cross F_1 was made by careful emasculation, bagging and hand pollination. All the seeds of this cross produced identical plants showing that the parents were true species and not hybrids or mixed. This cross was made in my gardens in San Fernando, California.

The leaves of this cross, which I am tentatively calling *B. tubimontanum**, has petiole and blade bearing splotches of color on all sides. The adventitious buds occur at every crenation with a tendency to crowd at apex. The width of leaf limb, which is deeply channeled, is about one inch; the upper leaves approach more nearly the tubular form. The adventitious buds, of which a considerable number has been grown into plants, faithfully reproduce the intermediacy of character shown by the F_1 hybrid.

The ease with which this plant may be propagated vegetatively, as well as by seeds, and the fact that aeriel roots form at every adventitious bud, makes this a valuable aquisition for genetic studies because the root-tips are used chiefly for studies of chromosomes and genes, the latter being hereditary units.

Left: *Bryophyllum tubiflorum.*
Right: *B. daigremontanum.*
Center: Hybrid of the two plants.

Of specific interest to the cactus fancier as well as perhaps to the florist is the fact that both the parents produce immense heads of pleasing, large wax-like flowers (see Vol. V, p. 564 Amer. Cact. Jour.). One parent (*B. tubiflorum*) being of rich dark red and the other (*B. daigremontanum*) of a dull china pink. The hybrid has not yet flowered, but whatever color the flower may be, unless the hybrid is sterile, will give rise to a new race in F_1 generation of every possible variation of color. These plants are usually too lanky for florist or greenhouse culture, but they can be treated in the same manner as poinsettias by rerooting the tops after the inflorescence has appeared and since they can be "brought in" for Christmas or Easter, in all liklihood, these F_2s will be grown in large quantities for commercial purposes.

*To avoid confusion, this name will not appear in the index and should not be used until it has had a formal description, after flowering.

ON EPIPHYLLUMS

By E. O. ORPET

Among other great divisions of the xerophytes that we grow, there would seem to be a great interest growing rapidly in the tropical Epiphyllums. The keen collectors are ever ready to annex another kind *if different* to those they have. Names do not go very far, I do not think there are more than ten names extant that are regularly accepted for the *same* kind, and these are old time kinds that have been known and published in books and catalogs many years. We have discussed the naming question with many this last blooming season. There is also a scheme afoot for the organization of a "Phyllocactus Society" that we may get together and compare names and plants that go with them. Personally I do not think the time is yet ripe for this since we have just given birth successfully to another infant, a lusty one too, in the International Euphorbia Society publishing the EUPHORBIA REVIEW.*

If a suggestion is in order might we not at the next National Cactus and Succulent Show provide for the exhibition, for comparison purely, of as many flowers as we can get together from those interested in the matter; this would not interfere in any way with the regular class for plants in bloom, but be supplementary. If this suggestion is adopted, we will have to hold the show a little later, for as all know, there was a very poor showing of Epiphyllums in bloom at our last exhibition, they were just too late in coming in, and they are quite regular in their habits.

And now a little about the culture of Epiphyllums. Many know that in the past the writer has been a strong advocate of grafting the plants in order to get vigor, this was based on our first one which very many have seen, with a spread of over twelve feet trained on the lath house from which many big cuts have been taken off. Confession is good, always, and it is my turn by way of telling that we have plants here that have been grafted three years, alive, well fastened, but they will not grow. Over a hundred have been thrown out, and many which seemed to be distinct were cut off and rooted and how they did rejoice on their own roots. There is only one word that explains this, it is not an uncommon one—incompatibility. We know that in Europe there is one family which for three generations has been improving this genus and there are many others. The parentage must by now be among the elite and thoroughbred, certainly not willing to hobnob with an Opuntia or marry one.

This leads to the question we are asked more times than any other, "Is there a yellow Epiphyllum?" We here have flowered three that were warranted, but proved pure white when fully expanded, and in this connection the family above mentioned when questioned as to a yellow variety replied, "there is no yellow one."

A word here as to names. There is a fine variety called *peacockii* once removed from *Heliocereus speciosus* which gave all the colors to the Phyllos, for years this has masqueraded as *pecockii*, and the other day I listened to a statement that the name originated in the peacock-like colors present in the flowers. Over fifty years ago a Mr. Peacock was perhaps the only amateur cultivator of cacti and other succulents in England. An Echeveria was named for him at one time and he exhibited frequently his quaint plants, and may have raised this fine kind.

*$2.00 a year. Address Mrs. J. M. Warner, Secy., 3744 Seneca Ave., Los Angeles, Calif.

CHICAGO CACTUS SOCIETY FIRST ANNUAL SHOW

Horticultural Hall, Garfield Park Conservatory was the scene of the Chicago Club's first cactus show on Sept. 1st. Miss Myrtle H. Zachman writes:

"I am very late with my renewal to your Journal because I was busy showing my cacti and succulents at the Garfield Park Exhibit. I entered five groups and won seven prizes and I am so thrilled. So, enclosed you will find my prize money, $3 for the JOURNAL. Mr. Van Tress, one of your Society members was one of the judges. It was our first show and quite a good presentation for Chicago. We have one big problem; our plants get so dirty from the smoke, even inside our green houses—dirt that does not wash off. Perhaps the JOURNAL can help us solve that too."

EDITOR'S NOTE: In reference to the last question, please do not write Miss Zachman to move her collection to California although we would like to have her reenforce our ranks. Mr. Van Tress reports 19 exhibitors, 100 entries and an attendance of 7000.

BLUHENDE KAKTEEN UND ANDERE SUKKULENTE PFLANZEN

Mappe 24 contains four more of the valuable colored plates in full color: *Melocactus maxonii* (Rose) Gurke, *Echinocactus* (Stenocactus) *arrigens* Link, *Gymnocalycium pflanzii* Vaupel and *Euphorbia fruticosa* Forskal. These portfolios are issued bimonthly and can be obtained from J. NEUMAN, Neudamm, Germany for $6 per year.

J. E. Olmstead of Live Oak Manor Cacti Gardens, Newhall, Calif., will send a free package of 100 seeds of *Scerocactus polyancistrus* to any Society member sending him a self addressed stamped envelope.

Books and Catalogues: If you have books that you desire to sell or those that you would like to buy, communicate with the Editor, 6162 N. Figueroa St., Los Angeles.

ON FORCING ZYGOCACTUS FLOWERS

From my experience, the chief factor is "plenty of water," until the time the plants should bud.

In the greenhouse we use the same soil as for geraniums, namely, fresh loam from grass mold. It does not matter if it is quite rich. With this species, drainage doesn't matter. The plants are watered *every day,* and the soil is always moist. With this treatment the leaves—if I may so call *them—are thick and substantial, and each one* throws out three or four others, which is repeated two and sometimes three times during the growing season. About the beginning of October they are watered perhaps twice a week, and towards the end of the month they are allowed *to dry out. Early in November the buds, one,* two, three and occasionally four, appear at the extremity of every terminal leaf. We do not consider a plant of much commercial value with less than, say, sixty flowers.

As soon as the buds are set, the plants are *watered again with daily frequency, varied only* to control the development of the flowers. The temperature also is controlled to 60 degrees in the daytime, and 50 degrees at night. If the flowers are developing too fast, we lower the night temperature to forty-five degrees.

In the house, watering every second day is sufficient to keep the soil moist. I have a large plant which I subject to the same treatment as those in the greenhouse. Last season it had well over a hundred flowers at Christmas. I allowed it to dry out, repotted in fresh soil, and had about the same number of blooms again at Easter. I don't think a single terminal leaf "missed."

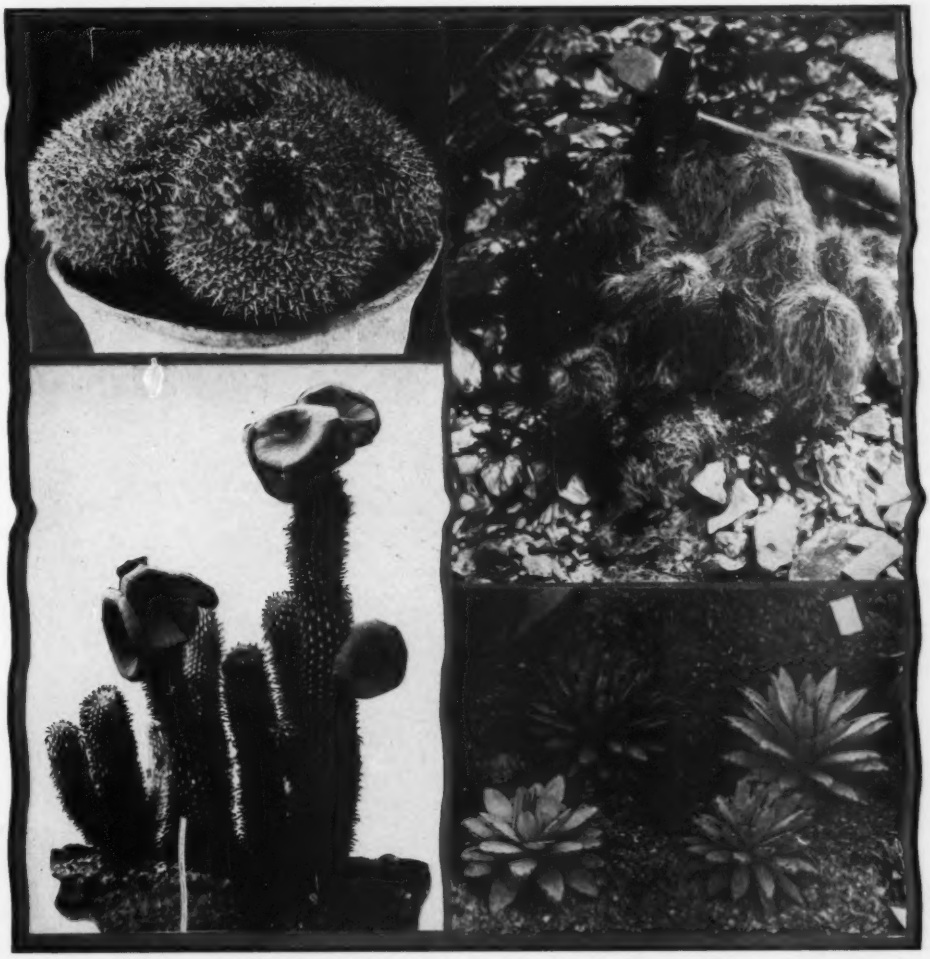
*The great mistake with Zygocactus is treat*ing them like plants from an arid district. They are one type of cactus that you can't kill with water. If you do, there is something else wrong. I am refering to the common "zygo." Our experience with other varieties is limited. I refer to *plants on their own roots. I imagine grafted* plants would have to be considered as to the water requirements of the stock.

Here is a suggestion with regard to grafts. I offer it as there may be others situated like myself,with no easy access to pereskias and other *commonly used stocks. I had a number of seed*ling *Opuntia spinosior.* I grafted "zygos" on these at the same time as others were grafted on *Selenicereus macdonaldiae.* The spinosiors have got the latter beaten two to one. I also splice grafted a small piece of rat-tail to an *Opuntia spinosior,* and in six weeks it has produced fourteen strong branches about two inches long. "Zygo" grafts on *Opuntia imbricata* are not quite as good, but they still beat the *Selenicereus macdonaldiae* for some reason or other.

In conclusion, may I offer a problem of my own? Will someone kindly explain the best method of separating the seeds from such fleshy fruits as those of the epiphyllums?

J. D. CAREY DENNIS, *Canada.*

J. R. Pirtle and Sons, Rio Grande Valley Cactus Garden of Edinberg, Texas, contains over 1500 species of cacti and succulents, most of which are large specimen plants.



UPPER LEFT: *Neomammillaria auriareolis* Trez., a beautiful new species from Mexico. Photograph from Ferdinand Schmoll. LOWER LEFT: *Hoodia macrantha* Dtr. is described in THE STAPELIEAE as "the great flowered Hoodia which is the largest in the genus. The stems attain a height of 3 feet and a thickness of 3 inches. The flowers are 8 inches in diameter, light purple within ,with a yellow tone at the center. The inner face of the corolla is covered with thick purple erect hairs. Discovered by Prof. Dinter in tropical South West Africa. 'Like all Hoodias' says Prof. Dinter '*H macrantha* will not live more than 3 or 4 years, but it may easily be renewed from seed, or from cuttings which are easily rooted.'" This picture shows a plant in the collection of Dr. R. H. Pulleine, Adelaide, Australia. UPPER RIGHT: *Echinocereus de laetii* Gke. in the Sierra de la Paila, Coahuila, Mexico. Of all the cacti I have seen in their natural habitats, I consider this species the most interesting. It does very well in cultivation, but does not develop any flowers except in very sunny summers. A very great number of cactus species are found in the Paila mountain range, but none of them grows so far up the mountain sides as this species and a very little—hitherto undescribed—species of *Escobaria*. Count F. M. Knuth, Denmark. LOWER RIGHT: *Agave macracantha* seedlings, small and grayish-green, in the garden of Dr. R. W. Poindexter, Treasurer of the Society.

NEW LISTS

CALIFORNIA CACTUS NURSERY, 14427 Kittridge St., Van Nuys, Calif. Listing of over 400 cacti and the other succulents priced per single plant and dozen lots. Mr. Krejci desires to "be a steady and reliable source of supply to all those using these interesting plants for decorative purposes in quantity."

SMALL GRAFTED CRESTS

Rebutia miniscula 75c
Notocactus ottonis 75c
Notocactus scopa 75c

All three, $2.00

GATES FAMOUS CACTUS GARDENS
119 South Illinois Street, Anaheim, Calif.

WEST INDIAN CACTUS PLANTS

can now be secured without special permit by writing to

G. ANTON,
Box 922, Mayaguez, P. R.

8 varieties Echevarias $1.00
15 varieties Echevarias $2.25
25 varieties Echevarias $4.00

SCHICK NURSERY
715 S. Central Ave., Glendale, Calif.
(no catlogue)

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Eight foreign Cactus Seedlings for $1.00 prepaid. Your choice of:

Cephalocereus catingicola, euphorbiodes, gounellei, palmeri, polylophus, senilis; Pilocereus chrysostele, glaucescens; Escontria chiotilla; Pachycereus columnatrajani, marginatus, pecten-aboriginum, pringlei; Lemaireocereus chichipe, dumortieri, laetus, queretaroensis, stellatus, thurberi; Trichocereus pasacana, bridgesi, spachianus; Borzicactus straussi; Binghamia acrantha, melanostele; Oreocereus trolli; Cleistocactus baumanni; Myrtillocactus geometrizans, schenckii; Cereus bolivianus; Echinocereus delaeti; Chamaecereus sylvestri; Echinofossulocactus zacatecensis; Ferocactus crassihamatus; Echinocactus ingens; Malacocarpus maassi; Neomammillaria bocasana, compressa, elongata, magnimamma.

CHARLES L. CASS NURSERY
Pacific Beach, Calif.

Large number of rare cacti seedlings cheap to make space for new seedlings. Many Cephalocereus and Pilocereus included.

L. E. BERRY CACTUS GARDEN
2040 W. 81st St., Los Angeles, Calif.

Caralluma wilfriedii; Trichocaulon karasmontanum, englerii; Piaranthus nebrownii; Stapelia portae-taurinae, longipes, fleckii, dinterii, 25c each. *Ceropegia meyerii,* 50c; *radicans* and *stapeliaeformis,* 30c each.

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Specializing in Cacti, Asclepiads, Mesembryanthema, etc.

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Stapelia cooperii, 15c; *Echeveria bynesia,* 20c; *E. carnicolor,* 15c; *E. rosea grandis,* 15c; *E. derenbergia,* 20c; *E. sanguinea,* 15c; *E. montanum,* 10; *E. nodulosa,* 15c; *E. venezuelensis,* 15c; *E. australis,* 10c; *Graptopetalum amethystinum,* 15c; *G. glutinosum,* 15c; *Pachyveria La Rochette,* 10c. Prepaid on orders of $1.00. Unrooted Cuttings to the Trade, per 100 F.O.B. *Opuntia microdasys* $1.00; *O. rufida,* $1.50; *O. prolifera,* 50c; *O. occidentalis,* 50c; *O. basalaris,* $1.50; *O. monocantha,* 75c; *O. tomentosa,* $2.50; *Aloe ciliaris,* 75c; *A. safronaria,* $1.25; *A. nobilis,* $2.00; *A. arborescens,* $1.50; *Crassula tetragona,* 35c; *C. portulacae,* 50c.

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September and October are best months to plant South American seed—their natural springtime. List free.

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RELEASED MEXICAN CACTI. Specimen size, 8 to 10 inch body, *Ferocactus gracilis, coloratus, peninsulae, viscainensis, tortuospinus,* each $2.50. YALE DAWSON, 2924 E. 5th St., Long Beach, Calif.